

WHAT IS CLAIMED IS:

1. A color conversion method of converting printing image data, // which comprises process color image data defined by a coordinate value of a predetermined first color space, // and spot color image data defined by a coordinate value of a characteristic direction, // into image data defined by a coordinate value of a predetermined second color space, // for a proofer for outputting a proof image in which an image obtained through printing of an image based on the printing image data in accordance with a predetermined printing condition is reproduced, // said color conversion method comprising //

15 a printing condition conversion step associated with a printing condition, of converting the coordinate value of the first color space into coordinate values of a colorimetry color space which is device-nondependent;

20 a spot color reference step of converting a spot color name into the coordinate values of the colorimetry color space;

a proof condition conversion step associated with a proof condition, of converting the coordinate values of the colorimetry color space into coordinate values of the second color space; and

25 a composition step of synthesizing, on the colorimetry color space or the second color space, image data defined by coordinate values of the colorimetry color

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space or the second color space, wherein the process color image data is converted, with image data defined by coordinate values of the colorimetry color space or the second color space, wherein the spot color name is

5 converted,

wherein the printing image data, which comprises the process color image data defined by the coordinate value of the first color space, and the spot color image data defined by the coordinate value of the characteristic direction, is converted into the image data defined by the coordinate value of the second color space, for the proofer.

2. A color conversion method according to claim 1, wherein said composition step is a step of synthesizing different types of image data on the second color space,

of the printing image data, the process color image data defined by the coordinate value of the first color space is converted into image data defined by the coordinate values of the colorimetry color space in said printing condition conversion step, and the image data defined by the coordinate values of the colorimetry color space thus obtained through the conversion is further converted into image data defined by the coordinate value of the second color space in said proof condition conversion step,

the spot color name is converted into the coordinate values of the colorimetry color space in said

spot color reference step, and the coordinate values of the colorimetry color space thus obtained through the conversion is converted into the coordinate value of the second color space in said proof condition conversion step,

5 and

in said composition step, the image data defined by the coordinate value of the second color space, for the proofer, is synthesized in accordance with the image data defined by the coordinate value of the second color space, 10 after conversion by said proof condition conversion step, the coordinate value of the second color space corresponding to the spot color, after conversion by said proof condition conversion step, and the spot color image data of the printing image data.

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3. A color conversion method according to claim 1, wherein said composition step is a step of synthesizing different types of image data on the colorimetry color space,

20 of the printing image data, the process color image data defined by the coordinate value of the first color space is converted into image data defined by the coordinate values of the colorimetry color space in said printing condition conversion step,

25 the spot color name is converted into the coordinate values of the colorimetry color space in said spot color reference step,

in said composition step, the image data defined by the coordinate values of the colorimetry color space, for the proofer, is synthesized in accordance with the image data defined by the coordinate values of the colorimetry color space, after the conversion by said printing condition conversion step, the coordinate values of the colorimetry color space corresponding to the spot color, after the conversion by said spot color reference step, and the spot color image data of the printing image data, and

the image data defined by the coordinate values of the colorimetry color space, for the proofer, which is synthesized by said composition step, is converted by said proof condition conversion step into the image data defined by the coordinate value of the second color space, for the proofer.

4. A color conversion method according to claim 2, wherein prior to conversion of the printing image data into the image data for the proofer, there is produced a process color conversion step in which the coordinate value of the first color space is directly converted into the coordinate value of the second color space in accordance with said printing condition conversion step and said proof condition conversion step,

in conversion of the process color image data of the printing image data, there is applied said process

color conversion step instead of individual application of both said printing condition conversion step and said proof condition conversion step, so that of the printing image data, the process color image data defined by the 5 coordinate value of the first color space is converted into image data defined by the coordinate value of the second color space before synthesized with the spot color image data.

10 5. A color conversion apparatus for converting printing image data, which comprises process color image data defined by a coordinate value of a predetermined first color space, and spot color image data defined by a coordinate value of a characteristic direction, into image 15 data defined by a coordinate value of a predetermined second color space, for a proofer for outputting a proof image in which an image obtained through printing of an image based on the printing image data in accordance with a predetermined printing condition is reproduced, said color 20 conversion apparatus comprising:

 a definition storage section for storing
 a first coordinates conversion definition
 associated with a printing condition, defining an
 association between the coordinate value of the first color
 space and the coordinate values of a colorimetry color
 space which is device-nondependent,

 a spot color and coordinates conversion definition

defining an association between a spot color name and the coordinate values of the colorimetry color space,

a second coordinates conversion definition

defining an association between the coordinate values of

5 the colorimetry color space and the coordinate value of the second color space, and

a coordinates composition definition defining an association among coordinate values of the colorimetry

color space or the second color space, wherein the process

10 color image data is converted, on the colorimetry color space or the second color space, coordinate values of the colorimetry color space or the second color space, wherein the spot color name is converted, and a set of coordinate values wherein said two types of coordinate values are

15 synthesized; and

a color conversion section for converting the printing image data, which comprises the process color

image data defined by the coordinate values of the first color space and the spot color image data defined by the

20 coordinate values of the characteristic direction, into the image data defined by the coordinate value of the second color space, for the proofer, referring to said first

coordinates conversion definition, said spot color and coordinates conversion definition, said second coordinates

25 conversion definition, and said coordinates composition definition, which are stored in said definition storage section.

6. A color conversion apparatus according to
claim 5, wherein said coordinates composition definition,
which is stored in said definition storage section, defines
5 an association between said two types of coordinate values
of the second color space and said set of coordinate values,
and said color conversion section comprises:

first conversion means for converting the process color image data defined by the coordinate value of the first color space, of the printing image data, into image data defined by the coordinate values of the colorimetry color space, referring to said first coordinates conversion definition;

15 second conversion means for converting the spot color name into the coordinate values of the colorimetry color space, referring to said spot color and coordinates conversion definition;

third conversion means for converting the image data defined by the coordinate values of the colorimetry color space, after conversion by said first conversion means, into image data defined by the coordinate value of the second color space, referring to said second coordinates conversion definition;

fourth conversion means for converting the
25 coordinate values of the colorimetry color space,
associated with the spot color, after conversion by said
second conversion means, into the coordinate value of the

second color space, referring to said second coordinates conversion definition;

first composition means for synthesizing the image data defined by the coordinate value of the second color space, for the proofer, in accordance with the image data defined by the coordinate value of the second color space, after conversion by said third conversion means, the coordinate value of the second color space corresponding to the spot color, after conversion by said fourth conversion means, and the spot color image data of the printing image data, referring to said coordinates composition definition.

7. A color conversion apparatus according to
claim 5, wherein said coordinates composition definition,
15 which is stored in said definition storage section, defines
an association between said two types of coordinate values
of the colorimetry color space and said set of coordinate
values, and said color conversion section comprises:

20 fifth conversion means for converting the process
color image data defined by the coordinate value of the
first color space, of the printing image data, into image
data defined by the coordinate values of the colorimetry
color space, referring to said first coordinates conversion
definition;

25 sixth conversion means for converting the spot
color name into the coordinate values of the colorimetry
color space, referring to said spot color and coordinates

conversion definition;

second composition means for synthesizing the image data defined by the coordinate values of the colorimetry color space, for the proofer, in accordance with the image data defined by the coordinate values of the colorimetry color space, after conversion by said fifth conversion means, the coordinate values of the colorimetry color space corresponding to the spot color, after conversion by said sixth conversion, and the spot color image data of the printing image data, referring to said coordinates composition definition; and

seventh conversion means for converting the image data defined by the coordinate values of the colorimetry color space, for the proofer, which is synthesized by said second composition means, into the image data defined by the coordinate value of the second color space, for the proofer, referring to said second coordinates conversion definition.

20 8. A color conversion apparatus according to
claim 5, wherein said coordinates composition definition,
which is stored in said definition storage section, defines
an association between said two types of coordinate values
of the colorimetry color space and said set of coordinate
values, and said color conversion section comprises:
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 coordinates conversion definition construction
 means for constructing a third coordinates conversion

definition to directly associate the coordinate value of the first color space with the coordinate value of the second color space in accordance with said first coordinates conversion definition and said second coordinates conversion definition;

5 eighth conversion means for converting the process color image data defined by the coordinate value of the first color space, of the printing image data, into image data defined by the coordinate values of the second color
10 space, referring to said third coordinates conversion definition;

15 ninth conversion means for converting the spot color name into the coordinate values of the colorimetry color space, referring to said spot color and coordinates conversion definition;

20 tenth conversion means for converting the coordinate values of the colorimetry color space corresponding to the spot color, after conversion by said ninth conversion means, into the coordinate value of the second color space, referring to said second coordinates conversion definition; and

25 third composition means for synthesizing the image data defined by the coordinate values of the second color space, for the proofer, in accordance with the image data defined by the coordinate values of the second color space, after conversion by said eighth conversion means, the coordinate values of the second color space corresponding

to the spot color, after conversion by said ninth conversion, and the spot color image data of the printing image data, referring to said coordinates composition definition.

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9. A color conversion definition storage medium storing a color conversion definition for converting printing image data, which comprises process color image data defined by a coordinate value of a predetermined first color space, and spot color image data defined by a coordinate value of a characteristic direction, into image data defined by a coordinate value of a predetermined second color space, for a proofer for outputting a proof image in which an image obtained through printing of an image based on the printing image data in accordance with a predetermined printing condition is reproduced, said color conversion definition comprising:

20 a first coordinates conversion definition associated with a printing condition, defining an association between the coordinate value of the first color space and the coordinate values of a colorimetry color space which is device-nondependent;

25 a spot color and coordinates conversion definition defining an association between a spot color name and the coordinate values of the colorimetry color space;

a second coordinates conversion definition defining an association between the coordinate values of

the colorimetry color space and the coordinate value of the second color space, said second coordinates conversion definition being associated with a proof condition; and

a coordinates composition definition defining an

5 association among coordinate values of the colorimetry color space or the second color space, wherein the process color image data is converted, on the colorimetry color space or the second color space, coordinate values of the colorimetry color space or the second color space, wherein
10 the spot color name is converted, and a set of coordinate values wherein said two types of coordinate values are synthesized.